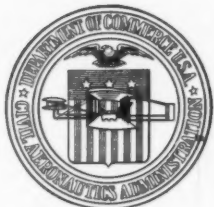


CIVIL AERONAUTICS JOURNAL



ISSUED TWICE MONTHLY BY THE
CIVIL AERONAUTICS ADMINISTRATION

Durham, N. C.

VOLUME 3

WASHINGTON, MARCH 1, 1942

NUMBER 5

"Many stories will we be able to relate of the habits and the haunts of the Americans, that curious race of people we have been honoured to live amongst—almost as curious as the English, they loved liberty and freedom of speech. Strange Gods, in such a world as this.

*"And we shall never tire of recounting how proud we were of our training 'westward, where the land is bright,' where Democracy is still a cherished ideal, and Freedom is not banished from the minds of men * * **

EDITOR'S NOTE.—R. A. F. Trainees G. J. Cassidy and B. H. P. Keady at Embry-Riddle School of Aviation are authors of the above, which appeared in the weekly school paper.

College Flyers Asked To Join Civil Air Patrol

College flyers and aviation enthusiasts have been invited to participate in the Civil Air Patrol, now being organized throughout the country by the Office of Civilian Defense.

Earle L. Johnson, executive officer of the Civil Air Patrol in Washington, said that defense of the national home front needs the cooperation of the many aviation experts now in colleges and universities. Service in the Civil Air Patrol will not interfere with regular academic activities, Mr. Johnson said, pointing out that it will fit conveniently into students' extracurricular programs.

Enlistment of at least 90,000 civilian pilots and student flyers throughout the Nation is the immediate aim of the CAP program. The variety of jobs they will be called on to accomplish for the armed services will be determined by the extent of the emergency, said the executive officer.

Possible Assignments

Suggesting possible assignments of CAP flyers, Mr. Johnson listed the fol-

lowing: Cross-country courier service, observation patrol of back country or uninhabited coastal areas, towing of aerial gunnery targets, ferry service for training and observation planes. Private flyers often know their own States better than anyone else, and consequently are in a position to do local flying assignments most effectively, he said.

After pilots have been enrolled, other citizens with ground work knowledge will be enlisted in the Civil Air Patrol. Aviation experts with Government certificates for any skill or experience related to aviation, such as A. and E. mechanics, control-tower operators, radiotelephone operators, will be welcome in the CAP.

Auxiliary Duty

For auxiliary duty, other citizens interested in aviation will be needed to volunteer for clerical work, driving cars or ambulances, watchmen, first-aid instruction and kindred services. For apprentice duty, more will be sought to undertake mechanical, airport supervision, control tower, or other instruction, under a training program now being set up.

The Civil Aeronautics Board recently announced that private pilots who participate in official missions of the Civil

(See AIR PATROL, page 58)

C. P. T. Again Gets Insurance Saving

Another downward revision of insurance rates for participants in the Civil Aeronautics Administration's pilot training program has been made, Charles I. Stanton, Acting Administrator, has announced. This is the seventh voluntary reduction in rates on the part of the insurance companies since the inception of the program in 1939.

Rates for the \$3,000 life and \$1,000 hospitalization and accident insurance for trainees in the elementary course have been lowered from \$7 to \$4.90. Rates for students in the secondary course have been lowered from \$9 to \$6.30. For the C. A. A.'s Type "A" training, which covers the secondary, cross-country and instructor courses, the rate has been reduced from \$25 to \$17.50, and for Type "B" training, covering cross-country and instructor courses only, the rate which was formerly \$16 has been reduced to \$11.20.

Each flight operator is required to carry \$50,000 to \$100,000 public liability and \$5,000 property damage insurance on each C. A. A. student enrolled in his

(See C. P. T. INSURANCE, page 59)

MARCH 1, 1942

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U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS JOURNAL



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Flying Training Command

Secretary of War Stimson recently announced the creation of a Flying Training Command of the Army Air Corps to speed the training of 30,000 new pilots, observers, navigators and other personnel needed to match the 1942 airplane production program.

Air Patrol

(Continued from page 57)

Air Patrol or other recognized organizations, while members of such organizations, may now receive remuneration for such participation.

Sixteen years is the minimum age for enrollment in the Civilian Air Patrol for ground service, and 18 for flight duty. Applications and detailed information may be obtained by communicating with the wing commander of the Civil Air Patrol in each State capital.

Women Needed

Meanwhile Maj. Gen. John F. Curry, CAP national commander, declared that all of America's more than 3,000 licensed women pilots who become members of the Civil Air Patrol will be utilized to the full extent of their capabilities.

"There will be absolutely no discrimination as to race, creed, color, or sex in the Civil Air Patrol, and each member is to be accepted and assigned to duties strictly upon the basis of his or her experience and record of performance," General Curry said. "This has been the policy of CAP from its inception as a part of the Office of Civilian Defense."

General Curry's statement came in answer to questions as to whether women flyers would be given only minor assignments and missions in the patrol.

"There must be no doubt in the minds of our gallant women flyers that they are needed and, in my opinion, indispensable to the full success of "CAP," he said.

"A great part of the progress made in organizing civilian aviation under the Civil Air Patrol has been due to the volunteer help given by women flyers—members of The Women Flyers of America and the Ninety Nines," General Curry said.

- Keep 'Em Flying -

700 Percent Increase

At one of the leading aircraft firms combat plane deliveries in the last quarter of 1941 were increased 700 percent over the first quarter.

New Models Added to Old Type Approvals

(Approval numbers and dates of approval of new models in parentheses)

Appliances

Escanaba, skis, model 300. Approved static load per ski 1400 lbs. (Type Certificate No. 129, 1-17-42)



The prevention of fire during sulphur dusting operations with aircraft has long been recognized as an important safety problem. Sulphur has a very low ignition point and is highly combustible when atomized with air, which is the case during dusting operations. Also, it picks up electric charges readily. Under favorable atmospheric conditions of low relative humidity, this can lead to combustion.

In April 1940 the Civil Aeronautics Administration recommended certain fire-preventive alterations to be made in all aircraft engaged in spreading sulphur dust. Reports of two additional occurrences of fire during sulphur dusting since then have led to the preparation of Safety Regulation Release No. 89, which reviews the problems involved and presents such information as is available on the prevention of fire during such operations.

Material contained in the release is based on information received from owners and pilots engaged in sulphur dusting, fire protection and prevention associations, and accident reports received by the C. A. A.

Among the primary causes of fire during sulphur dusting with aircraft are listed the following: Carelessness, sparks from the engine exhaust, static electricity, pressure between the hopper gates and their guide channels, poorly designed or improperly fitting agitator shafts, sparks caused by the tail skid while taxiing, and inadequate ventilation.

In each case, corresponding preventive measures are given. These range from simple, common-sense precautions to technical details of equipment. An example of the former is the reminder that dusting with a dirty airplane coated with oil and sulphur dust is inviting trouble and therefore aircraft used for spreading sulphur should be kept as clean as possible at all times.

The C. A. A. does not rely on advice alone, however. Some of the preventive measures listed in the release are required to be incorporated in airplanes engaged in spreading sulphur dust before they can receive certification or annual endorsement of their airworthiness certificates. These mandatory measures are listed in Airworthiness Maintenance Bulletin No. 63. Both this and Safety Regulation Release No. 89, prepared by the Aircraft Engineering Division of C. A. A., can be obtained from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C.

Students to Build 500,000 Models

American high school youths have been asked by Secretary of the Navy Frank Knox to participate in a vital part of the Navy's training program by producing 500,000 aircraft models—10,000 each of 50 different types of fighting planes—for training personnel in aircraft recognition and range estimation in gunnery practice and for training civilians in aircraft recognition for civilian defense. The Office of Education is extending the request to 26,000 youths and the Navy Bureau of Aeronautics is preparing plans and specifications for the planes.

The Office of Education will administer the program in cooperation with all State Departments of Education and thousands of local public and private high schools. First sets of working drawings will reach the cooperating schools by February 23. Models will be made on a precise scale with one inch representing six feet on the actual plane. Qualified inspectors will review every model submitted; planes must be perfect in every detail. The Bureau of Aeronautics and Office of Education will present certificates to students completing stated quantities of models passing inspection. Approved models will be sent to aviation units, ashore and afloat.

Designation of Medical Examiners

During January 1942, the following physicians were officially authorized to make physical examinations for the Administration.

CALIFORNIA—Dr. Francis H. O'Neill, 525 7th St., Eureka.
MONTANA—Dr. William F. Hamilton, Medical Building, Havre.
NEW YORK—Dr. Carl Hammerstrom, 16 East 5th St., Jamestown; Dr. Donald C. Tulloch, 623 Ford St., Ogdensburg.
PENNSYLVANIA—Dr. Lyman S. Fannin, Main St., Bradford; Dr. Percival M. Kerr, 204 South Franklin St., Wilkes-Barre.
RHODE ISLAND—Dr. Harvey B. Sanborn, 112 Waterman St., Providence.

Address Changed

The following named medical examiner has changed his address during the month, his new address being as follows:

Dr. David A. Dunkley, 712 State and City Bank Building, Roanoke, Va.

Examinations Discontinued

The following physicians are no longer making examinations for the Administration.

Dr. Orris R. Myers, Eureka, Calif.
Dr. George M. Shearer, Jamestown, N. Y.
Dr. Robert Lateiner, New Rochelle, N. Y.
Dr. Gerald N. Flugel, Wilkes-Barre, Pa.
Dr. William N. Hughes, Providence, R. I.



Plan for Guarding Flight Operations Commended by CPT

The Civil Aeronautics Administration has distributed to all coordinators and flight contractors under the Civilian Pilot Training Program copies of a letter from a flight contractor in Houston, Tex., describing the plan he has put into effect for safeguarding flight operations. The Standards Division of C. P. T. urged that "serious consideration" be given to this plan by all operators who had not already inaugurated a system of protection. Text of the letter follows:

Superintendent, Civilian Pilot Training:

We have devised a method of controlling our flight activities that may be of interest to other operators.

A metal flight authorization plate has been inscribed for each airplane, both training and private planes, in our hangars. These plates are in the possession of the dispatcher and any student or private owner wishing to use an airplane must first present his reinstated certificate to the dispatcher and file a complete flight plan on a prepared form before being permitted to use the airplane.

After completing his flight plan, which indicates the exact territory over which the plane will be operated and the length of time it will be gone from the field, the pilot is issued this metal plate which he presents to the line chief. The line chief checks him out in his airplane and at the completion of the flight returns the metal plate to the pilot who returns it to the dispatcher as he checks in.

By the above method we have an accurate record of every flight regardless of the purpose of the flight or whether or not it was made in connection with our training activities. These flight plans are permanent records available to any Government agency needing that information. This method also prevents an unauthorized person from flying an airplane, even though it may be his own.

In addition to the control of airplanes, we have issued identification cards to our employees and students. Our place of business is closed to the public except upon proper identification. No loitering or visiting socially is permitted among our employees. In spite of these restrictions our business is picking up a great deal and we expect to be busier than ever.

AVIATION ENTERPRISES, INC.,
Houston, Tex.

Navy Plans Training Of 30,000 Pilots

Secretary of Navy Frank Knox has announced establishment of a "greatly enlarged" aviation training program, designed to develop 30,000 a year of the "toughest" pilots in the world. Mr. Knox said the new five-point program includes: (1) Navy and Marine Corps to induct more than 2,500 cadets monthly for an annual total induction of 30,000 pilots; (2) facilities at four large universities to be leased—one each in the East, South, Middle West, and Far West; (3) 3-month preliminary toughening process for the best physical specimens among the nation's youth; (4) prominent sports figures, educators, psychologists and pilots with actual battle experience to be named for faculty and advisory boards; (5) a set-up in training to provide a vast pilot reservoir for the increased plane production program.

Mr. Knox said the system will be in operation by May 1 or sooner and applications for training are already being accepted. He said ground-work for the new plan had been worked out before the attack on Pearl Harbor under the direction of Assistant Secretary of Navy for Air A. L. Gates, and Admiral John H. Towers, Chief of the Bureau of Aeronautics. He said the "toughening" process was too strenuous for adoption during peacetime on a voluntary basis.

Lt. Comdr. Tom Hamilton, former head football coach at the Naval Academy and a top-flight naval flier, will direct the physical training, Mr. Knox said. Lt. Comdr. James J. (Gene) Tunney, Director of Physical Training for all naval personnel, will be consultant.

C. P. T. Insurance

(Continued from page 57)

school and the rates on these policies have also been reduced substantially.

"Prior to our introduction of 'controlled' flight training," said Mr. Stanton, "a \$3,000 policy cost the student pilot \$35. We started our program with a \$20 rate, and the cost is now less than one-fourth of that amount. The unparalleled safety record established by our trainees—more than 6 million miles per fatality—has caused these successive reductions on the part of commercial companies."



Airport Management Forum



Outline Suggests Ways of Developing Municipal Airports

(EDITOR'S NOTE: The following outline submitted by Mr. Burton represents careful thought and farsightedness in the planning and management of an airport. It will undoubtedly prove of value as a source of ideas to other airport managers even though their local circumstances differ. It is for this reason that we print the outline here.)

Municipal Airports—Management and Development

By L. W. Burton, Jr.
Director of Aviation
Orlando, Florida

I. The Operation of the Airport on a Sound Business Basis as a Public Utility

A. Existing revenues should be diverted to the city treasury and new revenues should be created and developed in order that the airport will be self supporting, and in fact a source of additional revenue to the city.

B. Public service at the airport should be efficient and developed in order that transient or tourist pilots will be at-

(See MUNICIPAL AIRPORTS, page 62)

Publications of Interest to Airport Managers

From time to time, it is proposed to list under this heading various publications that might prove of value to airport managers, either for furnishing general background or for applying to a particular problem. Following are some books and published articles on the subject of—

Airport Financing, Zoning, and Liability

FINANCING MUNICIPAL AIRPORT OPERATION, Report No. 143, American Municipal Assn., 1313 E. 60th St., Chicago. Mimeographed copies, \$1.

MUNICIPALITIES AND AIRPORT ZONING, American Municipal Assn., 1313 E. 60th St., Chicago. 50 cents.

AIRPORTS, THEIR LOCATION, ADMINISTRATION AND LEGAL BASIS, by H. V. Hubbard, F. Williams and M. McClintock; Cambridge, Harvard Univ. Press; 1930; \$3.50.

AIRPORTS AND AIRPLANES AND THE LEGAL PROBLEMS THEY CREATE FOR CITIES, by John A. McIntire, Charles S. Rhyne, et al.; National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. Report No. 42, 1939. \$1.

"Airport Dollars and Sense," by A. W. Bernshon, FLYING AND POPULAR AVIATION, Dec. 1941, page 38.

What Do You Think?

By way of reminder, this page was started as a regular monthly feature of the CIVIL AERONAUTICS JOURNAL after queries to airport managers all over the country brought overwhelming endorsement of the idea. As the heading indicates, this page is to serve as an airport management forum—a place where airport managers can air their problems and exchange constructive ideas.

To be of full benefit, a discussion should be directed along certain channels, a leading topic should be developed. If you have any suggestions as to what topics are of greatest importance and interest, or if you have any comments on the outline for municipal airport development printed on this page, send them to the CIVIL AERONAUTICS JOURNAL, Civil Aeronautics Administration, Washington, D. C. Any other suggestions, criticisms, or problems are welcome. The best of each will be printed.

"Intermunicipal Cooperation in Establishing, Maintaining and Operating Airports," by Emil F. Jatz, THE JOURNAL OF AIR LAW AND COMMERCE, October 1941, page 301.

"Airport Legal Developments of Interest to Municipalities—1940," by John M. Hunter, Jr., THE JOURNAL OF AIR LAW AND COMMERCE, April 1941, page 148.

"To Sue or Not to Sue: Airport Owners' Legal Rights," by S. Rothfeld, AVIATION, November 1940, page 42.

"The Legal Experience of Airports," by Charles S. Rhyne, THE JOURNAL OF AIR LAW AND COMMERCE, October 1940, page 297.

"Law May Get You: Legal Points for Airport Owners," S. Rothfeld, AVIATION, June 1940, page 38.

"Municipal Airport—Protection of Airport Approaches—Zoning as Exercise of Police Power," THE JOURNAL OF AIR LAW AND COMMERCE, July 1939, page 422.

"Municipal Corporation—Liability for Injuries at Municipal Airport," THE JOURNAL OF AIR LAW, April 1937, page 270.

Airport Investments And Operations Shown in Survey

A completed survey of airport investments and operations for 1939 and preliminary data on the 1940 survey have been issued by the Civil Aeronautics Administration. The 1939 survey covered approximately 90 percent of the active civil airports in the continental United States. Of the \$20,956,501 spent on these airports, \$11,342,456 was contributed by the various Federal agencies interested in airport work, especially the W. P. A.

The chart reproduced on the opposite page is the first of a series. It contains statistical data never before compiled and published. Similar data for the calendar years 1940 and 1941 will appear in the near future. Factors contributing to the apparent delay in the publication of the 1939 survey material were preparation of the C. A. A. airport development program, slow return of completed forms from the field, and the transition from manual to machine tabulation.

The C. A. A. intends to prepare pictograph charts presenting statistics on the Maintenance and Operations costs, Airport Owners' Income, Total Airport Income, Airport Profit or Loss if warranted by the data on hand and airport activities such as noncarrier aircraft and passenger movements.

In addition to the presentation of statistical data, it is planned to collect and present nonstatistical facts on the various methods used in assessing airport charges.

The table below presents preliminary figures of the 1940 survey.

Preliminary Data on the 1940 Airport Investment & Operations Survey¹

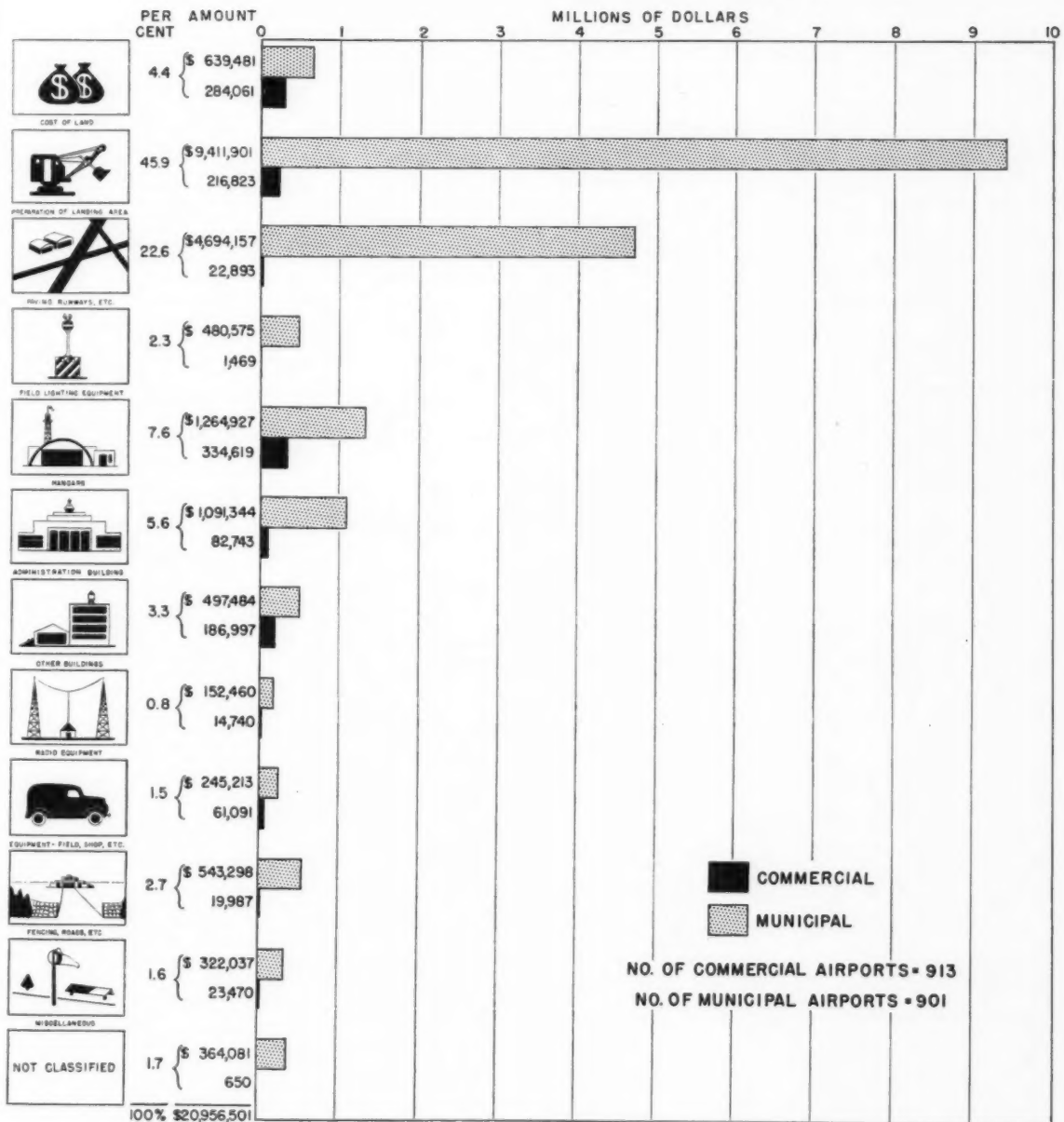
	Amount	Percent increase over 1939
Number of airports reporting.....	1,938	6.8
Land purchased or donated.....	2,782,025	201.2
Capital improvements.....	22,262,161	10.8
Maintenance and operations costs.....	\$ 6,196,728	33.7
Owners' income.....	\$ 3,339,338	22.3
Other income from use of airport.....	\$ 34,060,874	88.8

¹ Final detail tabulations are in process of preparation and should be available within the next few months. The data presented above do not include LaGuardia field and a few other of the larger fields.

² Does not include interest charges.

³ Gross income.

CAPITAL INVESTMENTS ON CIVIL AIRPORTS IN 1939



SOURCE: Survey of Airport Investments
and Operations for 1939

PLANNING AND SURVEY SECTION
AIRPORT DIVISION
Jan. 1942 Dr. No. 363

MARCH 1, 1942



Municipal Airports

(Continued from page 60)

tracted to the airport, and that Orlando's flying public will be well served.

C. The Department of Aviation should carry on effective public relations operations through radio, press and other mediums in order that the airport will be a source of public interest, attract flying tourists and enhance the reputation of the city.

D. The airport should be technically operated in full accordance with the safety and traffic regulations of the C. A. A.

E. The airport management and the city legal staff should make a joint study of existing ordinances and their effectiveness in relation to established aviation law. (I have examined a considerable number of cases at the Library of Congress and have found that municipalities are amazingly liable for damages in connection with airport accidents.)

II. Development of Phases of Aviation That Will Benefit and Tend to Develop the Growth of the Municipality.

A. *Air Freight*.—Probably the most important after-effect of the present war will be "Air Freight." Orlando is a natural benefactor of air freight. In fact there is a confidential study being made at present to determine the quantities of air freight that might be moved from central Florida. "As grow transportation centers so grow their adjacent communities." If planned well in advance and carefully followed through, Orlando will be one of the most important air freight centers in the country. Vast fleets of converted bombers will carry thousands of tons of air freight all over the world.

B. *Air Terminal*.—Due to the tourist, winter resort, and commercial aspects of Orlando's location, the city can be developed into a thriving air passenger terminal. The existence of two municipal airports may make it possible in the future to use one as an air freight terminal and the other for passenger airline and local flying.

C. *Development of Orlando As a Center for Air Tourists*.—Virtually every young man will be a pilot after the war and most of them will travel considerably with their families in their own planes. Orlando is a natural place for large air meets and air tours.

III. Military Liaison

A. At this time a careful and most cooperative liaison must be maintained with the military by the municipal government. The local military station is

an aviation unit making full use of city owned facilities. Coordination between airline and military flying is also most important.

IV. Commercial Airlines

A. Probably the most important source of revenue to the airport will be the airlines. Important C. A. A. officials, to whom I have talked, advise me that airline traffic will increase, not diminish, during the war.

V. Development of Municipal Airport Services to the Orlando Flying Public

A. After the war is over the now two hundred Orlandoans who fly for business or pleasure will be increased to several thousand local citizens who will fly themselves and who will of necessity have facilities and service available.

142 Airport Programs Completed by March 31

As of March 31, 1942, there will be a total of 142 completed airport servicemen's training programs, the U. S. Office of Education has announced.

The following airports will complete their training programs during March:

Lock Air Terminal, Burbank, Calif.; Pittsburgh-Butler Airport, Pittsburgh, Pa.; Butte Municipal Airport, Butte, Mont.; Cheyenne Municipal Airport, Cheyenne, Wyo.; Des Moines Municipal Airport, Des Moines, Iowa; Duluth Airport, Duluth, Minn.; Gainesville Municipal Airport, Gainesville, Fla.; Jacksonville Municipal Airport, Jacksonville, Fla.; Sky Harbor Airport, Phoenix, Ariz.; Pontiac Municipal Airport, Pontiac, Mich.; Swan Island Airport, Portland, Ore.; Lambert Field, St. Louis, Mo.; St. Paul Municipal Airport, St. Paul, Minn.; Tulsa Municipal Airport, Tulsa, Okla.; Wichita Municipal Airport, Wichita, Kans.

The following airports completed their training programs during February:

Newark Airport, Newark, N. J.; Lock Haven Airport, Lock Haven, Pa.; Burlington Municipal Airport, Burlington, Vt.; Tri-Cities Airport, Binghamton, N. Y.; Owens Field, Columbia, S. C.; St. Josephs County Airport, South Bend, Ind.; Kent County Airport, Grand Rapids, Mich.; Port Columbus Airport, Columbus, Ohio; Kansas City Municipal Airport, Kansas City, Mo.; Madison Municipal Airport, Madison, Wis.; Wiley Post Airport, Oklahoma City, Okla.; Adams Field, Little Rock, Ark.; West Mesa Field, Albuquerque, N. Mex.; Love Field, Dallas, Tex.

Airport Projects Approved

In accordance with the provisions of section 303 of the Civil Aeronautics Act, the Administrator of Civil Aeronautics has issued certificates of air navigation facility necessity, authorizing the expenditure of Federal funds in the operation of the following projects:

ALABAMA		
Huntsville, Municipal Airport (WPA)-----	\$224, 557	
CALIFORNIA		
Blythe, Blythe Airport (WPA)-----	365, 100	
COLORADO		
La Junta, Municipal Airport (WPA)-----	14, 663	
IDAHO		
Idaho Falls, Municipal Airport (CAA-WPA)-----	390, 851	
Lewiston, Municipal Airport (WPA)-----	420, 304	
NEW MEXICO		
Hot Springs, Municipal Airport (WPA)-----	6, 002	
NEW YORK		
New York, La Guardia Airport (WPA)-----	87, 540	
SOUTH DAKOTA		
Grand Forks, Grand Forks Airport (CAA-WPA)-----	233, 433	
NORTH CAROLINA		
Camden, Woodward Airport (WPA)-----	12, 633	
WASHINGTON		
Ephrata, CAA Intermediate Field (CAA-WPA)-----	87, 828	
WYOMING		
Casper, Wardwell Field, Casper Airport (CAA-WPA)-----	220, 778	
Casper, Wardwell Field, Casper Airport (WPA)-----	10, 111	
Sheridan, Sheridan County Airport (CAA-WPA)-----	217, 950	

Aeronautical Charts

During January the following new editions of aeronautical charts were issued by the United States Coast and Geodetic Survey. Pilots are warned that the previous editions of the same charts are canceled and now are obsolete.

Regional and direction-finding (DF) charts are sold for 40 cents each, while sectional charts are 25 cents each. On orders grossing \$10 or more, a 33 1/3 percent discount is allowed. Copies of these charts may be obtained from the Coast and Geodetic Survey, Washington, D. C., and from recognized dealers at major cities and airports.

New Edition of Radio Direction Finding Chart

26-DF—November 1941. Size, 29 by 32 inches. Located in latitude 25°-30° N., longitude 75°-91° W., an area of about 950,000 square miles. Accumulation of changes since the last edition included.

(Continued on page 64)



N. A. C. A. Bulletin Issued on Induction System De-icing

Following is the text of Bulletin No. 2, "Some Design Considerations for Induction Systems," prepared under the direction of the Special Sub-committee on Induction System De-Icing of the National Advisory Committee for Aeronautics. The Civil Aeronautics Board is distributing this memorandum, by arrangement with the N. A. C. A., because of its importance in connection with the elimination of accidents and the increase of safety in the operation of aircraft.

For aircraft engine induction systems incorporating the so-called "ice-free" types of carburetors, an effort is being made to establish general design criteria for providing inherent freedom from those icing hazards arising from the vaporization of the fuel. In this work a great many test runs have been made with the Holley 1375 carburetor on Wright Cyclone R-1820 G-202 and G-201 induction systems, during which observations were made through windows in the carburetor-supercharger adaptor while accumulating the ice and by quickly disassembling the setup after accumulating various amounts of ice. From this portion of the investigation so far executed and from other data available, the following conclusions have been drawn.

1. Ice formed on the inside of the induction system will not maintain its bond to the metal walls unless the metal temperature remains 32° F. or lower.

2. Temperatures of the induction system metal exposed to the charge mixture will follow the temperature of the mixture only so long as there is no coating of ice to insulate the metal from the refrigerated incoming charge. Heat from the ambient air surrounding the system and from other sources tends to raise the metal temperatures after ice has formed.

3. In every test so far made with ambient temperatures substantially above freezing, it was found that the ice was not bonded to the metal but was supported by the shape of the passage or by protuberances within the passage.

Design Criteria

From these conclusions, the following general design criteria may be evolved:

1. In order to benefit from the effect of insulation of the metal walls by ice formations, which effect tends to prevent adhesion of the ice, the passages of the induction system should be designed such that ice formations (both large and small) will not be retained by the geometrical shape of the passage or by protuberances such as studs, thermometer bulbs, or thermocouples.

(NOTE—Certain installations operated under certain conditions may not provide ambient air temperatures sufficiently high to furnish the required heat

Reduce Accidents Caused by Stalls, Instructors Told

Instructors face a responsibility and a challenge in reducing the number of accidents resulting from stalls during turns at low altitudes. This was the warning emphasized in a recent safety bulletin issued by the Civil Aeronautics Board. Full text of the bulletin follows:

A Challenge to Instructors

Are instructors responsible for accidents resulting from stalls occurring during turns at low altitudes? Read the following comment made by the Safety Bureau of the Civil Aeronautics Board:

"While examining a group of 20 accident reports submitted to us recently, we were again appalled with the continued repetition of accidents resulting from a stall at low altitude. All of the 20 occurred while the pilot was attempting to make a turn.

"A tabulation of the causes of these 20 accidents shows that nine of them resulted from stalls during the landing approach, and three from stalls occurring during the first turn following take-off. In no case was there any indication of reckless flying, and in all cases the person involved was either a student or a private pilot with limited experience.

"One of the 12 stall accidents occurred after engine failure on take-off and in two other cases a landing was probably being made because of engine trouble. In only the first, however, was there any definite emergency at low altitude and in that case the pilot attempted to turn back when there was a good field straight ahead.

"As a result of the accidents mentioned, 11 people were killed and 11 seriously injured. It appears to us that this is a fairly sad commentary on the ability of our so-called modern instructors and the instructional methods used. It is worthy of note that none of the cases involved a student of the Civilian Pilot Training Program. There is no good reason why the type of instruction used in the Program should be better than that found outside.

"Every instructor outside the Program should meet its challenge by making every effort to raise the standards of his own instructional work, thereby

reducing the number of accidents involving his students."

Remember, in the Present National Emergency, Our Country Cannot Afford Unnecessarily to Lose One Pilot or One Airplane.

INDIVIDUAL ACCIDENT REPORTS

Passenger's Struggling With Pilot Proves Fatal

Francis Marting, an uncertificated pilot, and his passenger, Carl H. Blake-man, were fatally injured in an accident near Mount Sterling, Ky., on August 3, 1941. The aircraft, a Model C-3 Aeronca, received major damage.

The pilot, accompanied by his passenger, took off from a field near Mount Sterling for a local nonrevenue flight during the course of an unauthorized air show which was being conducted from that field. Following the take-off the aircraft circled the field at an altitude of 200 or 250 feet. At the end of the 360-degree turn the pilot started another left turn. After about 180 degrees of this turn had been completed the aircraft fell off to the left in a diving, spiraling attitude, and so continued until it struck the ground in a nearly vertical position.

Subsequent investigation indicated no structural or control system failure and no malfunctioning of the engine prior to the crash. There was no lack of fuel. No complete record of the flying experience of the pilot could be found; it appears that he had, however, flown for a period of many years. So far as could be learned the subject flight was the first which the passenger had ever made. Witnesses, including those on the ground and others in an aircraft in flight, stated that the pilot and the passenger, seated side by side, seemed to be engaged in a struggle, which several of them described as a fight, just before the plane assumed the diving, spiraling attitude. The dual rudder controls were connected.

Probable Cause.—Action of passenger in interfering with the pilot.

Forced Landing Results From Powerplant Failure

Elton Estil Holland was seriously injured in an accident which occurred on July 2, 1941, about ten miles north of Shamrock, Tex. He held a private pilot certificate with a Class 1 Land rating and had flown a total of approximately 150 hours. The aircraft, a

(See ACCIDENT REPORTS, page 71)

(See DE-ICING, page 71)



Ocean Route Granted To American Export

The Civil Aeronautics Board has granted American Export Airlines, Inc., a temporary certificate authorizing the operation of an air route from New York to Foynes, Ireland. The certificate, approved by President Roosevelt, allows the Company to stop at the intermediate points, Bermuda; Horta, the Azores; and Lisbon, Portugal, for refueling purposes only.

In granting the certificate, the Board stated that "evidence taken in executive session and other available information relating to the national defense, make it abundantly clear that the inauguration of additional service to Europe, and especially direct service to the Irish Free State or the British Isles, is now urgent."

Board Sets Mail Rates For Two Delta Routes

The Civil Aeronautics Board has issued an opinion in which it fixed the rate of mail pay for Delta Air Corporation's routes 24 and 54.

Effective February 10, 1942, the company will receive 24 cents per airplane mile on its Fort Worth-Atlanta-

Charleston; Atlanta-Augusta-Savannah, and Atlanta to Cincinnati routes.

Rates fixed by the Board will result in an increase in mail compensation to Delta of approximately \$300,000 per year. Over three-fourths of this income results from the Atlanta-Cincinnati and Augusta-Savannah runs, inaugurated April 15, 1941, and May 1, 1941, respectively, on which no previous rates had been fixed.

Board Denies Braniff Plea for 2nd Schedule

The Civil Aeronautics Board has denied a petition of Braniff Airways, Inc., for approval of a second daily round-trip schedule between Oklahoma City, Okla., and Amarillo, Tex.

The Board stated that, although Braniff had been operating a second schedule between the two cities prior to November 1, 1941, "passenger loads do not indicate that the approval of the second schedule is required in the interest of commerce."

Aeronautical Charts

(Continued from page 62)

New Regional Aeronautical Charts

3-M.—September 1941. Size, 23 by 38 inches. Located in latitude 44°-49° N., longitude 90°-102° W., an area of about 206,000 square miles. Covers the area on Minot, Lake of the Woods, Fargo, Duluth, Aberdeen and Twin Cities sectional charts. Lithographed in 11 colors, it gives airports, names of airports, beacons, compass roses, isogonic lines in red; radio ranges in pink; railroads and topographic features in black; water in blue; areas of cities in yellow, and gradients of elevation in 3 tints.

4-M.—October 1941. Size, 23 by 38 inches. Located in latitude 44°-49° N., longitude 78°-90° W., an area of about 200,000 square miles. This new chart covers the area on the following sectional charts: Lake Superior, Green Bay, and Lake Huron. A portion of the provinces of Ontario and Quebec is shown. It is lithographed in 11 colors giving airports, names of airports, beacons, compass roses, isogonic lines in red; radio ranges in pink; railroads and topographic features in black; water in blue; areas of cities in yellow; and gradients of elevation in 3 tints.

New Editions of Regional Aeronautical Charts

6-M.—October 1941. Size, 26 by 38 inches. Located in latitude 38°-44° N., longitude 114°-125° W., an area of about 245,000 square miles. Includes an accumulation of changes since the last edition.

15-M.—January 1942. Size, 26 by 45 inches. Located in latitude 32°-35° N., longitude 87°-99° W., an area of about 299,000 square miles. Changes accumulated since the last edition included.

SUMMARY



Revenue passengers carried by domestic airlines in December 1941 totaled 278,583, an increase of 51.90 percent over the December 1940 figure, according to statistics compiled by the Civil Aeronautics Administration.

Airlines reported a total of 10,854,651 revenue miles flown during the month. This represented an 18.73 percent increase over the December total in 1940. Revenue passenger miles flown gained 48.16 percent to reach a total of 103,351,958 in December 1941.

The revenue passenger load factor was 55.39 percent in December 1941, as against 45.50 in December 1940.

The charts and table on the opposite page give domestic air carrier traffic statistics for 1939, 1940, and 1941, as well as the traffic statistics for the month of December 1941, by companies.

New Editions of Sectional Aeronautical Charts

Charlotte.—November 1941. Size, 20 by 45 inches. Located in latitude 34°-36° N., longitude 78°-84° W., an area of about 54,000 square miles. Columbia and Raleigh radio ranges realigned.

Cincinnati.—December 1941. Size, 20 by 43 inches. Located in latitude 38°-40° N., longitude 84°-90° W., an area of about 52,000 square miles. St. Louis radio range realigned.

Kansas City.—January 1942. Size, 20 by 43 inches. Located in latitude 38°-40° N., longitude 90°-96° W., an area of about 52,000 square miles. St. Joseph, St. Louis, Spring Bluff, and Lebo radio ranges realigned.

San Francisco.—December 1941. Size, 23 by 37 inches. Located in latitude 34°-38° N., longitude 120°-123° W., an area of about 25,000 square miles. San Francisco radio range added.

Spokane.—January 1942. Size, 20 by 38 inches. Located in latitude 46°-48° N., longitude 114°-120° W., an area of about 47,000 square miles. Missoula radio range relocated and isogonic lines for 1940 revised.

Army Gets 5 Stratoliners

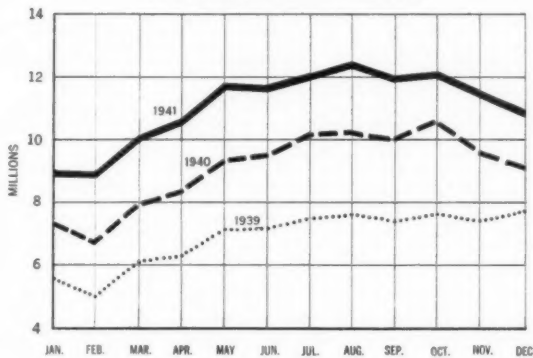
The War Department has announced that Transcontinental & Western Air, Inc., has turned over to the Army its fleet of five high altitude Boeing Stratoliners to fill the Army's need for long-range, high-speed equipment.

—Keep 'Em Flying—

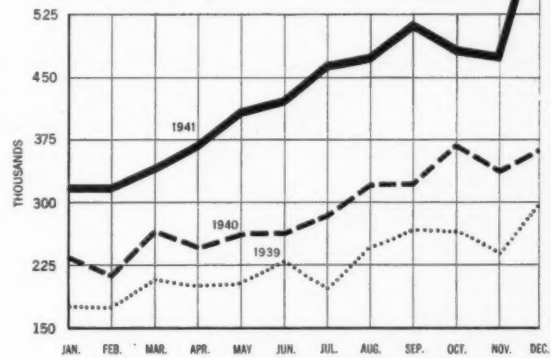


Domestic Air Carrier Statistics for 1939, 1940, and 1941

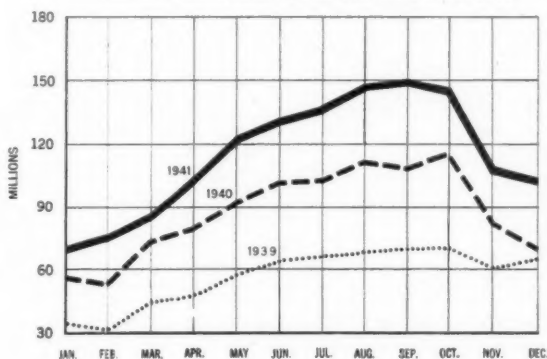
REVENUE MILES FLOWN



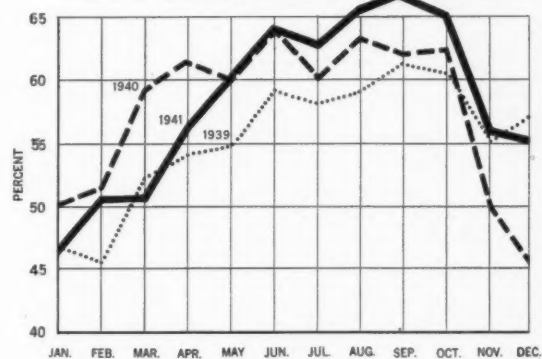
EXPRESS TON-MILES FLOWN



REVENUE PASSENGER-MILES FLOWN



REVENUE PASSENGER LOAD FACTOR



Domestic Air Carrier Traffic Statistics for December 1941

Operator	Revenue miles flown		Revenue passengers carried		Revenue passenger-miles flown		Express pound-miles flown		Revenue passenger load factor (percent)	
	December 1941	Percent change over 1940	December 1941	Percent change over 1940	December 1941	Percent change over 1940	December 1941	Percent change over 1940	December 1941	December 1940
All American Aviation, Inc.	65,795	—	0	—	0	—	319,517	—	—	—
American Airlines, Inc.	2,598,758	16.19	89,306	47.39	31,387,990	43.13	352,962,804	35.39	63.55	54.58
Brantford Airways, Inc.	504,937	23.28	12,620	39.23	4,010,435	60.60	27,779,170	41.84	48.78	38.55
Catalina Air Transport, Inc.	4,800	02.00	967	26.57	29,010	26.57	389,250	17.25	54.94	49.48
Chicago & Southern Air Lines, Inc.	196,010	51.42	5,382	96.50	2,023,365	99.73	9,428,822	34.75	47.91	40.94
Continental Air Lines, Inc.	150,829	27.45	1,814	64.16	487,007	38.75	1,399,935	51.94	31.97	29.59
Delta Air Corporation	248,928	40.23	7,538	107.49	2,178,614	116.79	6,435,475	145.98	52.50	46.67
Eastern Air Lines, Inc.	1,736,245	13.37	45,403	40.61	18,788,071	29.60	138,519,467	40.09	54.89	49.21
Inland Air Lines, Inc.	111,995	17.69	249	73.68	68,073	72.18	298,194	—56.70	16.65	25.71
Mid-Continent Airlines, Inc.	192,728	7.90	2,381	32.29	667,584	31.00	2,079,056	36.06	30.56	40.11
National Air Lines, Inc.	134,371	14.97	3,223	40.13	887,447	57.55	2,192,046	32.18	30.04	40.11
Northeast Airlines, Inc.	87,192	42.50	2,797	72.12	481,144	102.36	672,921	93.57	24.53	38.86
Northwest Airlines, Inc.	480,439	—00.25	8,640	25.45	3,569,214	24.69	58,771,226	84.62	46.35	29.62
Pennsylvania-Central Airlines Corporation	563,516	72.11	27,108	121.00	5,458,756	142.73	39,803,941	174.49	48.47	35.32
Transcontinental & Western Air, Inc.	1,508,900	15.19	31,028	57.37	13,905,592	44.54	243,825,901	137.81	51.96	45.06
United Air Lines Transport Corporation	2,048,901	15.99	35,422	45.22	17,984,136	61.71	493,226,780	149.70	61.30	43.50
Western Air Lines, Inc.	220,307	11.91	4,505	43.88	1,425,520	64.20	26,674,772	55.80	42.05	31.54
Total	10,854,651	18.73	278,583	51.90	103,351,958	48.16	1,404,779,277	93.97	55.39	45.50

¹ Carried passengers only the first 11 days of December.

Legislation Dealing With Aeronautics

During the first session of the Seventy-Seventh Congress, the following Public Laws, dealing in part with aeronautical activities, were enacted:

- PUBLIC LAW 13 (H. R. 3617)**—Making deficiency and supplemental appropriations for the Army and Navy for the national defense for the fiscal year ending June 30, 1941, and for other purposes; includes appropriations for various Naval Air Stations.
- PUBLIC LAW 16 (H. R. 2953)**—Extending the provisions of the act approved August 27, 1940, entitled "An act increasing the number of Naval aviators in the line of the Regular Navy and Marine Corps, and for other purposes."
- PUBLIC LAW 21 (H. R. 3155)**—To authorize the Secretary of the Navy to proceed with the construction of certain public works, and for other purposes; includes appropriations for various Naval Air Stations.
- PUBLIC LAW 22 (H. R. 3325)**—To authorize the Secretary of the Navy to proceed with the construction of certain public works, and for other purposes; includes appropriations for various Naval Air Stations.
- PUBLIC LAW 23 (H. R. 4056)**—Making supplemental appropriations for the national defense to provide aid to the government of any country whose defense the President deems vital to the defense of the United States, and for other purposes; includes authorizations for the purchase of aircraft and aeronautical material.
- PUBLIC LAW 29 (H. R. 4124)**—Making deficiency and supplemental appropriations for the fiscal year ending June 30, 1941, and for other purposes; includes authorizations for funds to expedite defense production.
- PUBLIC LAW 82 (H. R. 3538)**—To amend the act entitled "An act granting certain lands to the City of Biloxi, in Harrison County, Mississippi, for park and cemetery purposes," approved April 28, 1906; authorizes leasing of part of the land to the Army Air Corps for technical schools.
- PUBLIC LAW 97 (S. 840)**—To create the grade of aviation cadet in the Air Corps, Regular Army, and to prescribe the pay and allowances therefor, and for other purposes.
- PUBLIC LAW 98 (S. 1063)**—To provide increased pay for certain military personnel while engaged on parachute duty.
- PUBLIC LAW 99 (S. 1371)**—To authorize the training of enlisted men of the Army as aviation students.
- PUBLIC LAW 127 (S. 992)**—To amend sections 4613 and 4614 of the Revised Statutes of the United States to include captures of aircraft as prizes of war.
- PUBLIC LAW 128 (S. 1469)**—To amend the act of April 15, 1935, as amended, and for other purposes; authorizes the creation of the grade of aviation cadet in the Naval Reserve and the Marine Corps Reserve.
- PUBLIC LAW 152 (S. 1246)**—To amend section 2 of the act of April 3, 1939, so as to make its provisions applicable to personnel of all components of the Army of the United States; authorizes placement of Army personnel in private schools for aviation instruction.
- PUBLIC LAW 205 (S. 1480)**—To amend the act entitled "An act to authorize the leasing of public lands for use as public aviation fields," approved May 24, 1928, as amended; increases the area authorized to be leased.
- PUBLIC LAW 210 (H. R. 3537)**—To authorize the Secretary of the Navy to proceed with the construction of certain public works, and for other purposes; includes appropriations for various Naval Air Stations.
- PUBLIC LAW 241 (H. R. 5312)**—To authorize the Secretary of the Navy to proceed with the construction of certain public works, and for other purposes; includes appropriations for various Naval Air Stations.
- PUBLIC LAW 247 (H. R. 5412)**—Making supplemental appropriations for the national defense for the fiscal year ending June 30, 1942, and for other purposes; includes appropriation for Army Air Corps.
- PUBLIC LAW 282 (H. R. 5788)**—Making supplemental appropriations for the national defense for the fiscal years ending June 30, 1942, and June 30, 1943, and for other

purposes; authorizes purchase of aircraft and aeronautical material.

PUBLIC LAW 287 (S. 1701)—To provide for pay and allowances and mileage or transportation for certain officers and enlisted men of the Naval Reserve and Marine Corps Reserve and retired officers and enlisted men of the Navy and Marine Corps.

PUBLIC LAW 348 (H. R. 5476)—To provide aviation education in the senior high schools of the District of Columbia, and for other purposes.

PUBLIC LAW 353 (H. R. 6159)—Making supplemental appropriations for the national defense for the fiscal years ending June 30, 1942, and June 30, 1943, and for other purposes; authorizes funds for expediting production.

PUBLIC LAW 378 (S. 2995)—To authorize the Secretary of the Navy to proceed with the construction of certain public works, and for other purposes; authorizes purchase by the Navy of Floyd Bennett Field.

Pending Legislation

The following bills still were pending at the close of the first session of the Seventy-Seventh Congress. They were carried over into the second session, and retain their places on the legislative calendar.

- S. 1 (McCarran)**—Provides that the Civil Aeronautics Authority shall be an independent establishment of the Government, and for other purposes; referred to the Committee on Commerce.
- S. 7 (McCarran)**—Enacts the Aviation Salvage at Sea Convention into statute law in the United States; referred to the Committee on Commerce.
- S. 766 (Mead)**—Establishes an Air Line Pilots' Reserve, and for other purposes; referred to the Committee on Commerce.
- S. 888 (Hill)**—Authorizes the establishment and operation of a military engineering center to determine production costs of military aircraft; and for other purposes of national defense; referred to the Committee on Military Affairs.
- S. 987 (Gurney)**—Provides hospitalization and medical treatment for persons injured while receiving flight instruction under the civilian pilot training program provided for by the Civilian Pilot Training Act of 1939; referred to the Committee on Military Affairs.
- S. 1635 (McCarran)**—Establishes a Department of Aviation, consolidating therein all the activities of the Government relating to military aviation, and for other purposes; referred to the Committee on Military Affairs.
- S. 1716 (McCarran)**—Authorizes the advanced training in aeronautics of technical personnel of the Civil Aeronautics Administration; referred to the Committee on Commerce.
- S. 1717 (McCarran)**—Promotes safety in the development of air commerce by regulating the lighting of airports and other landing areas; referred to the Committee on Commerce.
- S. 1718 (McCarran)**—Provides for the training of air-traffic control-tower operators; referred to the Committee on Commerce.
- S. 1919 (McCarran)**—Amends the Civilian Pilot Training Act of 1939 so as to provide for the training of civilian aviation mechanics; referred to the Committee on Commerce.
- S. 2103**—Amends the National Defense Act of 1916 so as to authorize citizens of foreign countries who are graduates of Air Corps advanced flying schools and Air Corps service schools to wear aviation badges (passed by the Senate December 15, 1941, and sent to the House).
- H. Res. 125 (Nichols)**—Creates a select committee of the House to make an investigation of commercial airline accidents. The resolution was adopted by the House March 6, 1941. The Committee still is functioning.
- H. R. 3132 (Larrabee)**—Establishes a Division of Aviation Education in the U. S. Office of Education, Federal Security

Agency, and for other purposes; referred to the Committee on Education.

H. R. 3781 (Vinson)—Amends sections 4613 and 4614 of the Revised Statutes of the United States to include captures of aircraft as prizes of war; referred to the Committee on Naval Affairs.

H. R. 3855 (Fish)—Provides for hemispheric control of airways operating in Latin America; referred to the Committee on Foreign Affairs.

H. R. 4002 (Kramer)—Requires persons engaged in air commerce to equip passengers and flying personnel with parachutes, and to use safety devices similar to those required in the case of military and naval aircraft; referred to the Committee on Interstate and Foreign Commerce.

H. R. 4790 (Belter)—Establishes a Department of Air Power; referred to the Committee on Expenditures in the Executive Departments.

H. R. 4945 (May)—Amends the act of March 5, 1940, entitled "An act to facilitate the procurement of aircraft for national defense;" referred to the Committee on Military Affairs.

H. R. 4933 (Sauthoff)—Establishes a Department of National Defense, consolidating therein the Department of War and the Department of the Navy, and for other purposes; referred to the Committee on Expenditures in the Executive Departments.

H. R. 4962 (Plauche)—Establishes the Department of Military and Naval Aeronautics; referred to the Committee on Expenditures in the Executive Departments.

H. R. 4987 (Barry)—Creates an Aeronautics Department; referred to the Committee on Expenditures in the Executive Departments.

H. R. 5101 (Sutphin)—Establishes a Department of Aviation, consolidating therein the activities of the Government relating to military aviation, and for other purposes; referred to the Committee on Expenditures in the Executive Departments.

H. R. 5117 (Nichols)—Promotes safety in the development of air commerce by regulating the lighting of airports and other landing areas; referred to the Committee on Interstate and Foreign Commerce.

H. R. 5119 (Nichols)—Provides for the training of air-traffic control-tower operators; referred to the Committee on Interstate and Foreign Commerce.

H. R. 5327 (Sutphin)—Promotes the national defense and preparedness through the creation of a vast reservoir of potential airplane pilots and mechanics, and for other purposes; referred to the Committee on Interstate and Foreign Commerce.

H. R. 5695 (Randolph)—Amends the Civilian Pilot Training Act of 1939 so as to provide for the training of civilian aviation mechanics; referred to the Committee on Interstate and Foreign Commerce.

H. R. 5745 (Sikes)—Provides for the establishment and operation of an aviation academy for training persons for service as commissioned officers in the aviation branches of the military and naval forces; referred to the Committee on Military Affairs.

H. R. 6202 (May)—Amends the National Defense Act of 1916 so as to authorize citizens of foreign countries who are graduates of Air Corps advanced flying schools and Air Corps service schools to wear aviation badges; referred to the Committee on Military Affairs.

H. R. 6346 (May)—Provides for temporary promotion in the Army of the United States of officers commissioned in the Air Corps or assigned to duty with the Air Corps; referred to the Committee on Military Affairs.

Recent Legislation

Below are listed bills introduced and bills acted upon since the opening of the second session of the Seventy-seventh Congress.

- H. J. Res. 275—FEDERAL AIRCRAFT FACILITY (Sabath)**—providing for the creation of a Federal Aircraft Facility and for other purposes; referred to the Committee on Interstate Commerce.
- H. R. 6431—TRAINING OF CHINESE AVIATORS IN U. S. (Hall)**; a bill relating to the training of Chinese aviators in the U. S., and

(See LEGISLATION, p. 71)

CIVIL AERONAUTICS BOARD OFFICIAL ACTIONS

Abstracts of Opinions, Orders, and Regulations

FOR THE PERIOD FEBRUARY 1-15, 1942

ORDERS

ORDER No. 1510----- February 3, 1942

Adopted a supplemental order adjusting the rates of compensation for the transportation of mail by United Air Lines Transport Corp. over Routes Nos. 1, 11, and 17. (Opinion and order—Docket No. 16-406 (A)-1.)

ORDER No. 1511----- February 4, 1942

Granted Pan American Airways, Inc. permission to inaugurate service to Monrovia, Liberia through the use of the marine airport at Fisherman Lake, Liberia on February 4.

ORDER No. 1512----- February 4, 1942

Terminated the inquiry and investigation in the matter of the form of accounts and reports of domestic air carriers instituted by the order of the Board. (Order Serial No. 737.)

ORDER No. 1513----- January 30, 1942

Granted Pan American Airways, Inc. special permission to transport 11 passengers, subject to space available, from New York, New York, to Natal, Brazil, or any intermediate point where connections can be made for Rio de Janeiro, Brazil, in the conduct of an eastbound transatlantic flight from New York, New York, to Lisbon, Portugal.

ORDER No. 1514----- February 6, 1942

Dismissed petition of Fred B. Cann, holder of airline transport pilot certificate No. 4044, for reconsideration of the order of the Board (Order No. 1498.)

ORDER No. 1515----- February 6, 1942

Revoked student pilot certificate No. S-355027 held by Otis Eugene Tripp, Lock Haven, Pa., for piloting an aircraft carrying a passenger other than a certificated instructor in violation of the Civil Air Regulations.

ORDER No. 1516----- February 6, 1942

Revoked student pilot certificate No. 293183, held by Harry Sherwood Kelly, for piloting an aircraft over a congested area at an altitude of less than 1,000 feet and other violations of the Civil Air Regulations. (Opinion and order.)

ORDER No. 1517----- December 19, 1941

Authorized the issuance of a temporary certificate of public convenience and necessity to American Export Airlines,

Inc., authorizing foreign air transportation between New York, N. Y., and Foynes, Irish Free State. (Opinion and order—Docket No. 694.) (Signed by the President Feb. 3.)

ORDER No. 1518----- February 9, 1942

Denied the petition of Braniff Airways, Inc., for approval of a second round trip schedule between Amarillo, Tex., and Oklahoma City, Okla., on Route No. 15. (Opinion and order—Docket No. 1-406 (A)-1.)

ORDER No. 1519----- February 10, 1942

Suspended for 60 days student pilot certificate No. S-249237 held by Robert B. Brown, for piloting an aircraft over a congested area at an altitude of less than 1,000 feet and other violations of the Civil Air Regulations. (Opinion and order.)

ORDER No. 1520----- February 10, 1942

Revoked private pilot certificate No. 14849, held by Will C. Garrett, for giving flight instruction when he was not possessed of a flight instructor rating and other violations of the Civil Air Regulations.

ORDER No. 1521----- February 10, 1942

Granted Pan American Airways, Inc., permission to intervene in the application of Star Air Lines, Inc., for a certificate of public convenience and necessity authorizing air transportation between Juneau and Anchorage, Alaska.

ORDER No. 1522----- February 10, 1942

Approved an agreement (Contract C. A. B. 205) between Western Air Lines, Inc., and Eastern Air Lines, Inc., relating to the leasing of two Douglas DC-3 aircraft.

ORDER No. 1523----- February 10, 1942

Suspended for 15 days limited commercial pilot certificate No. 17194, held by Edwin Zellar, Melrose Lake, Ill., for carrying passengers for hire outside the 10-mile area surrounding his specified operating base in violation of the Civil Air Regulations.

ORDER No. 1524----- February 12, 1942

Granted the petition of American Airlines, Inc., to incorporate additional evidence in the record of the proceeding to determine fair and reasonable rates of compensation paid to American for the transportation of mail.

ORDER No. 1525----- February 12, 1942

Included Route No. 56 in the proceeding instituted to determine fair and reasonable rates of compensation paid to American Airlines, Inc., for the transportation of mail.

ORDER No. 1526----- February 13, 1942

Suspended for 6 months private pilot certificate No. 56251-41 held by James Edward Leverich, Sparta, Wis., for giving flight instruction for hire when not possessed of a flight instructor rating in violation of the Civil Air Regulations.

ORDER No. 1527----- February 13, 1942

Revoked private pilot certificate No. 63926, held by George L. Hipson, Brookline, Mass., for piloting an aircraft over an open air assembly of persons at an altitude of less than 1,000 feet in violation of the Civil Air Regulations.

ORDER No. 1528----- February 13, 1942

Suspended for 6 months private pilot certificate No. 87784-41 held by Arthur L. Mortensen, Nampa, Idaho, for piloting an aircraft on a civil airway while holding no currently effective pilot certificate and other violations of the Civil Air Regulations.

ORDER No. 1529----- February 13, 1942

Suspended for 90 days student pilot certificate No. S-214987, held by Walter Orvil Wallace, Tuscagoula, Miss., for carrying a passenger other than a certificated instructor in violation of the Civil Air Regulations.

REGULATIONS

AMENDMENT 20-33----- February 3, 1942

Effective February 3, 1943.

1. Change the number of the present section 20.673, relating to the logging of instrument flight time, to section 20.674.
2. Add a new section 20.673 to read as follows:

20.673 Logging of pilot flight time.

(a) *Student pilot.* The holder of a student pilot certificate may log as solo flight time only that time during which he is the sole occupant of an aircraft in flight.

(b) *Pilots of private grade or higher.* The holder of a pilot certificate, other than a student pilot certificate, may log as solo flight time that portion of any flight during which he is the sole manipulator of the controls: *Provided,* That he may log as solo flight time only 50 percent of any flight time during which a certificated instructor or a certificated airline transport pilot is in the aircraft serving as an instructor for the purpose of reviewing or increasing such

pilot's skill; and *Provided further*, That the holder of a commercial pilot certificate while serving in scheduled air transportation shall log his flight time as provided in Part 61.

(c) *Flight instructor*. A certificated instructor may log as solo flight time all that flight time during which he is serving as an instructor for the purpose of reviewing or increasing another pilot's skill.

AMENDMENT 20-34-----February 6, 1942

Effective February 6, 1942.

20.102 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war.

AMENDMENT 20-35-----February 6, 1942

Effective February 6, 1942.

20.112 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war and which government grants reciprocal commercial pilot privileges to citizens of the United States on equal terms and conditions with citizens of such foreign government.

AMENDMENT 20-36-----February 6, 1942

Effective February 6, 1942.

20.152 *Citizenship*. Same as § 20.102.

AMENDMENT 21-4-----February 3, 1942

Effective February 3, 1942.

1. Change the number of the present section 21.442, relating to the logging of instrument flight time, to section 21.443.

2. Add a new section 21.442 to read as follows:

21.442 *Logging of pilot flight time*. The holder of an airline transport pilot certificate may log as solo flight time that portion of any flight during which he is the sole manipulator of the controls or during which he is serving as an instructor in accordance with § 21.222: *Provided*, That he may log only 50 percent of any flight time during which a certificated instructor or a certificated airline transport pilot is in the aircraft serving as an instructor for the purpose of reviewing or increasing such pilot's skill; and *Provided further*, That the holder of an airline transport pilot certificate while serving in scheduled air transportation shall log his flight time as provided in Part 61.

AMENDMENT 21-5-----February 6, 1942

Effective February 6, 1942.

Strike sections 21.12 through 21.122, inclusive, and insert in lieu thereof the following:

21.12 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war and which government grants reciprocal commercial pilot privileges to citizens of the United States on equal terms and conditions with citizens of such foreign government.

AMENDMENT 22-1-----February 6, 1942

Effective February 6, 1942.

22.102 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war.

2 Opinions Available

Two more Civil Aeronautics Board opinions are available in printed form as advance sheets prior to their inclusion in a bound volume. They are: Opinion No. 48, *TRANSCONTINENTAL & WESTERN AIR, INC., Et Al.—CERTIFICATE OF CONVENIENCE AND NECESSITY (Reading Operation)*, Docket No. 380.

Opinion No. 61, *CATALINA AIR TRANSPORT—CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (Service to Santa Catalina Island)*, Docket No. 538.

Copies can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each. When ordering these publications, include the opinion serial number and the docket number as well as the opinion title.

AMENDMENT 22-2-----February 6, 1942

Effective February 6, 1942.

22.122 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war and which government grants reciprocal commercial pilot privileges to citizens of the United States on equal terms and conditions with citizens of such foreign government.

AMENDMENT 22-3-----February 6, 1942

Effective February 6, 1942.

22.132 *Citizenship*. Same as § 22.102."

AMENDMENT 24-7-----February 6, 1942

Effective February 6, 1942.

22.102 *Citizenship*. Applicant shall be:

(a) A citizen of and of unquestionable loyalty to the United States, or

(b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war."

AMENDMENT 26-0-----February 3, 1942

Effective February 3, 1942.

"PART 26—AIR-TRAFFIC CONTROL-TOWER OPERATOR CERTIFICATES"

Qualifications for Certificate:

- 26.1 General.
- 26.10 Physical.
- 26.11 Knowledge.

Qualifications for Ratings:

- 26.2 Character of ratings.
- 26.20 Qualifications for junior rating.
- 26.21 Qualifications for senior rating.
- 26.210 Knowledge.
- 26.211 Experience.
- 26.212 Other requirements.

Examinations:

- 26.3 General.
- 26.30 Physical examination.
- 26.31 Reexamination.

Issuance and Expiration of Certificates:

- 26.4 Duration.
- 26.40 Periodic endorsement.
- 26.41 Special issuance of certificate and rating.

Regulations:

- 26.42 Transfer.
- 26.43 Revocation.
- 26.5 Rating record.
- 26.50 Exercise of authority.
- 26.51 Control airports.
- 26.52 Relaying information.
- 26.53 Maximum hours.

- 26.54 Display of certificate.
- 26.55 Performance standards.
- 26.56 Equipment standards.
- 26.57 Inspection.
- 26.58 Surrender of certificate.

QUALIFICATIONS FOR CERTIFICATE

26.1 *General*.—An applicant must be a citizen of the United States, temperamentally fit, and not less than 21 years of age. He must be able to read, write, and understand the English language and to speak the English language without any accent or impediment of speech which would interfere with two-way radio conversation.

26.10 Physical.

(a) *Eye*.—An applicant must have:

(1) A visual acuity of at least 20/20 in each eye separately, without correction, and an average depth perception of 30 millimeters or less, with or without glasses: *Provided*, That if the vision in either or both eyes is not poorer than 20/50 and is brought up to 20/20 or better in each eye by glasses, or if the depth perception is greater than 30 millimeters and can be corrected to at least 30 millimeters by glasses, an applicant may be qualified in either event on condition that the correcting glasses be worn while he is on duty;

(2) No diplopia;

(3) Not more than one drop of hyperphoria;

(4) Properly balanced eye muscles with a divergence (abduction) of 3 prism diopters, minimum; and a convergence (adduction) of 6 prism diopters, minimum; independently of each other.

(5) Sufficient accommodation to pass a prescribed test based primarily upon ability to read official aeronautical maps;

(6) Normal fields of vision; and

(7) No pathology of the eye.

(b) *Ear, nose, throat, and equilibrium*.—An applicant must be able to hear the whispered voice at 8 feet with each ear separately; must have no acute or chronic disease of the middle or internal ear; no disease of the mastoid; no unhealed perforations of the ear drum; no disease or malformation of the nose or throat which would interfere with or be aggravated by the performance of his duties; and no disturbance of equilibrium.

(c) *General physical condition*.—An applicant must have no organic or functional disease, nor structural defect or limitation, which would interfere with his duties as an air-traffic control-tower operator.

(d) *Nervous system*.—An applicant must have no disease of the mental or nervous system and no abnormality of the personality. (e) *Exceptions*.—The failure by an applicant to comply with any of the above physical requirements will not disqualify him if, in the opinion of the Administrator, his experience in aeronautics gained prior to his disability offsets such physical deficiency.

26.11 *Knowledge*.—An applicant must pass an examination in the following subjects:

(a) Air traffic rules set forth in Part 60 of the Civil Air Regulations;

(b) Airport traffic control procedures, and Part 26 of the Civil Air Regulations;

(c) Airway traffic control procedures;

(d) Radio frequencies and procedures used for airport traffic control;

(e) Use of radio aids to air navigation;

(f) The making of weather observations;

(g) Pertinent rules and regulations of the Federal Communications Commission. An applicant who presents satisfactory evidence that he possesses a restricted radiotelephone operator's permit or higher grade of radiotelephone operator's license issued by the Federal Communications Commission will not be required to take the examination prescribed in this subsection.

QUALIFICATIONS FOR RATINGS

26.2 *Character of ratings*.—The holder of an air-traffic control-tower operator certificate (hereafter referred to as "certificate") may receive a junior or senior rating, depending upon his qualifications to perform the duties of an air-traffic control-tower operator (hereafter referred to as "operator") at a particular airport.

¹ Lists of source material covering the subject matter of these examinations can be obtained from any Regional Manager of the Civil Aeronautics Administration.

26.20 Qualifications for junior rating.—An applicant must pass an examination on the following subjects:

- (a) Local airport rules of the airport for which the rating is sought;
- (b) Local aircraft operations and such other aircraft operations as may affect conditions at the airport for which the rating is sought;
- (c) Teletype symbols and weather sequences of the airways converging on the airport for which the rating is sought;
- (d) Any other subject or subjects in which the Administrator may deem an examination necessary.²

26.21 Qualifications for senior rating.

26.210 Knowledge.—An applicant must pass an examination in the subjects required for a junior rating and, in addition, the following subjects:

- (a) Air-navigation facilities within a radius of 200 miles of the airport for which the rating is sought;
- (b) Airway traffic control procedures in the area in which the airport for which the rating is sought is located;
- (c) Instrument approach and departure procedures at the airport for which the rating is sought;
- (d) Any other subject or subjects in which the Administrator may deem an examination necessary.³

26.211 Experience.—An applicant must have performed satisfactory service:

- (a) As an operator with a senior rating for at least 6 months; or
- (b) As an operator with a junior rating at the airport for which the rating is sought for the 6 months immediately preceding application; or
- (c) As an air-traffic control trainee in Federal service for at least 6 months; or
- (d) For 1 year of the 2 years immediately preceding application as:

(1) An operator with a junior rating at an airport other than that at which the rating is sought; or

26.212 Other requirements.—The applicant must demonstrate his ability to supervise and manage all activities of the airport control tower or airport control station, which shall at least include the preparation of such reports as may be required from time to time by the airport manager or the Administrator.

EXAMINATIONS

26.3 General.—The prescribed examinations will be conducted by representatives of the Administrator at a designated time and place. The passing grade in any subject shall be at least 70 percent.

26.30 Physical examinations.

(a) The prescribed physical requirements must be met before any practical or theoretical examination will be given and must be completed within the 60 days immediately preceding application for a certificate.

(b) A statement by a Medical Officer on active duty with the United States Army, Navy, Marine Corps, or Coast Guard, who is authorized to conduct physical examinations for flying, that an active member of his service met the physical requirements within the preceding 60 days prescribed in section 26.10 will be accepted in lieu of the report of the physical examination required herein. Such statement shall be on the form prescribed and furnished by the Administrator.

26.31 Recamination.—An applicant who has failed to pass any examination may apply for recamination after the expiration of 30 days from the date of his failure.

ISSUANCE AND EXPIRATION OF CERTIFICATE

26.4 Duration.—A certificate will be issued for an initial period of 60 days but, if the holder is not notified to the contrary by the Administrator within that period, it will continue in effect indefinitely, expiring only in the event that:

- (a) The holder of the certificate fails to secure an endorsement⁴ thereof by an inspector of the Administrator within the last 45 days of the 12 months' period⁵ after the date of issuance; or

² The applicant will be given adequate notice of the subject of the examination.

³ The applicant will be given adequate notice of the subject of the examination.

⁴ This endorsement will be referred to hereafter as a "periodic endorsement".

⁵ This 12 months' period will be referred to hereafter as the "endorsement period".

(b) An inspector of the Administrator shall refuse to endorse the certificate after inspection or examination.

26.40 Periodic endorsement.

(a) A certificate will not receive a periodic endorsement unless the holder—

- (1) Has met the physical requirements prescribed for the original issuance of his certificate within the 60 days immediately preceding the expiration of the endorsement period; and

(2) Has served satisfactorily as a rated operator at some time during the 12 months immediately preceding the date of application for endorsement.

(b) A certificate will not receive a periodic endorsement with respect to any rating unless the holder has served satisfactorily as an operator at the airport to which the rating applies at some time during the 6 months immediately preceding the expiration of the endorsement period.

26.41 Special issuance of certificate and rating.—If a certificate and rating expires, a new certificate and rating will be issued if the applicant complies with the requirements for periodic endorsement. In applying this section, the time during which the applicant must serve as a rated operator in order to comply with the periodic endorsement requirements shall be computed from the date of the application for special issuance rather than the date of expiration of the endorsement period.

26.42 Transfer of a certificate is prohibited.

26.43 Revocation.—No person whose air-traffic control-tower operator certificate has been revoked shall apply for or be issued an air-traffic control-tower operator certificate of any rating for a period of one year after the revocation, except as the order of revocation may otherwise provide.

REGULATIONS

26.5 Rating record. A certificated operator shall not serve as such unless there is attached to his certificate the appropriate rating record prescribed and issued by the Administrator, nor serve otherwise than in accordance with the limitations prescribed by the Administrator in his certificate or rating record.⁶

26.50 Exercise of authority. An operator on duty at a control airport within an airway traffic control area or a control zone of intersection shall not authorize contact flight rule operations below contact flight rule weather minimums in accordance with the authority vested in such operators by Part 60 of the Civil Air Regulations,⁷ unless the operator previously notifies either the airway traffic control center if the airport is located in an airway traffic control area or airway communication station if the airport is located in a control zone of intersection of the action to be taken. *Provided*, That an operator with a junior rating shall not exercise this authority unless such action is taken with the consent of an operator with a senior rating for the particular airport, who is on duty and is present in the control tower at the time the authorization is given.

26.51 Control airports.—An operator with a junior rating shall not control air traffic at a control airport except under the supervision of an operator with a senior rating for such airport: *Provided*, That in an emergency the person in charge of the tower may authorize an operator with a junior rating for the airport to control air traffic during the period of such emergency, if such person immediately notifies the regional manager of the Administrator, for the region in which the airport is located, of the existence of the emergency and the facts and circumstances surrounding it: *Provided further*, That whenever the Administrator finds, in the interest of safety, that this authority should not be exercised, it shall terminate upon notification by the Administrator.

26.52 Relaying information.—An operator shall not relay information or instructions

⁶ The rating record is a sheet which will be attached to all certificates when they are issued and will prescribe the airports at which the holder is authorized to serve and the class of rating held.

⁷ Part 60 of the Civil Air Regulations empowers an operator on duty in a radio-equipped airport control tower in operation at a control airport to authorize flying in a control zone when the ceiling or visibility is below the minimums which prevail in the absence of any such special authorization.

received from airway traffic control personnel, airway communications, or United States Weather Bureau airport stations, otherwise than in the manner approved by the Administrator.

26.53 Maximum hours.—Except in case of an emergency, a certificated operator shall be relieved of all duty for not less than 24 consecutive hours at least once during each 7 consecutive days, and shall not serve, nor be required to serve, as such:

- (a) In excess of 10 consecutive hours;
- (b) In excess of 10 hours during a period of 24 consecutive hours unless the operator is given a rest period of not less than 8 hours at or before the termination of such 10 hours of duty.

26.54 Display of certificate.—An operator shall keep his certificate readily available when he is on duty and shall present it for inspection upon request of any officer or employee of the Administrator or Board and of any State or municipal official charged with the duty of enforcing local laws or regulations involving Federal compliance.

26.55 Performance standards.—A certificated air-traffic control-tower operator shall control air traffic in accordance with practices and procedures prescribed by the Administrator as being best calculated, among other things, to avoid collisions and to establish uniformity in air traffic control.

26.56 Equipment standards.—A certificated air-traffic control-tower operator shall not control air traffic with facilities which the Administrator has determined to be inadequate.

26.57 Inspection.—An applicant or a holder of a certificate or rating, upon reasonable request by any representative of the Administrator, shall cooperate fully in any examination which may be made of him.

26.58 Surrender of certificate.—Upon the suspension, revocation, or expiration of a certificate, the holder shall, upon request, surrender such certificate to a representative or employee of the Administrator.

AMENDMENT 27-5—February 6, 1942

Effective February 6, 1942.

27.12 Citizenship.—Applicant shall be:

- (a) A citizen of and of unquestionable loyalty to the United States, or
- (b) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war and which government grants reciprocal commercial airway privileges to citizens of the United States on equal terms and conditions with citizens of such foreign government.⁸

AMENDMENT 51-4—February 6, 1942

Effective February 6, 1942.

51.10 Citizenship.—Applicant shall be:

- (1) A citizen of and of unquestionable loyalty to the United States, or
- (2) A person who is in sympathy with the objectives of the United States and who is a trustworthy citizen of a friendly foreign government not under the domination of or associated with any government with which the United States is at war.

AMENDMENT 60-54—February 3, 1942

Effective February 13, 1942.

60.58 Airspace reservations.—No flight of aircraft shall be made within any airspace reservation set aside by order of the President of the United States.

AMENDMENT 60-55—February 10, 1942

Effective February 10, 1942.

60.115 Range approach channel. A range approach channel is the airspace above the ground or water below 17,000 feet above sea level located within 2 miles of either side of the center of the on course signal of any leg or legs designated by the Administrator of a radio range station serving a control airport, and extending along such leg or legs from such radio range station for a distance of 15 miles: *Provided*, That such range approach channels may be modified or extended by the Administrator when he deems it necessary in the interests of safety.

AMENDMENT 60-56... February 10, 1942

Effective February 10, 1942.

Add immediately following section 60.38 a new section 60.39 to read as follows:

60.39 Flight in range approach channel. Unless on an approved flight plan, no person shall fly an aircraft within the limits of a range approach channel above 1,500 feet over the surface of the earth except to enter such channel on the right side as determined by the proposed direction of flight along such channel and then to continue along the right side of such channel in normal cruising flight. No person shall fly an aircraft below 1,500 feet above the surface of the earth in such channel except to cross such channel at an angle of not less than 45° in normal cruising attitude: *Provided*, That a pilot taking off from or landing at a designated landing area located within a range approach channel may perform such maneuvers below 1,500 feet as are necessary to effect a normal take-off therefrom or a normal approach and landing thereon, as the case may be.

60.391 Flight within local flying areas adjacent to a control airport. The Administrator may designate flight zones for specific purposes within the local flying area, as defined in §60.95, adjacent to any control airport. Thereafter, within such local flying area, no person shall make a flight of a type for which a zone has been set apart, except within such zone.

AMENDMENT 60-57... February 10, 1942

Effective February 10, 1942.

60.393 Aircraft in contact flight within three miles horizontally of the center of an airport or other landing area shall conform to the circle rule provided in §60.3301 unless flying at an altitude in excess of 1,500 feet above such airport or other landing area.

AMENDMENT 98-1... February 3, 1942

Effective February 3, 1942.

1. Strike section 98.117, relating to solo flight.

2. Strike from the table of contents of Part 98 the following: "98.117 Solo flight."

REGULATION NO. 204... February 12, 1942

SECTION 202.3 OF THE ECONOMIC REGULATIONS—PRESERVATION OF ACCOUNTS, RECORDS, AND MEMORANDA OF AIR CARRIERS

(a) All air carriers shall preserve the accounts, records, and memoranda designated in the Schedule Governing Preservation of Accounts, Records, and Memoranda of Air Carriers issued by the Civil Aeronautics Board, dated March 1, 1942, and such amendments thereto as may be hereafter prescribed by the Board (hereinafter referred to as the "Schedule"), for the length of time prescribed in such Schedule: *Provided, however*, That voluminous detailed records, such as material requisitions and issues, and time and labor distribution cards, may be photographed and the films kept in lieu of the original documents for the respective periods prescribed therefor. This proviso shall not apply to cash and journal vouchers and similar important documents, although it shall apply to the details in support thereof. The provisions of this Regulation shall apply to all accounts, records, and memoranda which come into the possession of an air carrier in connection with the acquisition of property by consolidation, merger, or otherwise. The preservation of duplicate accounts, records, and memoranda shall be optional with each air carrier.

(b) All accounts, records, and memoranda required to be preserved for a specified period of time prescribed in the Schedule may, unless hereafter otherwise ordered by the Board, be destroyed upon the termination of such period in the manner elected by each air carrier. All other accounts, records, and memoranda may, unless hereafter otherwise ordered by the Board, be destroyed at any time at the option of each air carrier. Supervision over the destruction of accounts, records, and memoranda of each air carrier shall be vested in an officer of such carrier who shall keep a permanent record, by classes and general description as specified in the Schedule of all accounts, records, and memoranda destroyed, together with the respective dates of destruction.

(c) If any accounts, records, and memoranda specified in the Schedule are destroyed accidentally by fire, flood, or other casualty, the air carrier shall prepare and file as soon as possible with the Civil Aeronautics Board a statement identifying the accounts, records, and memoranda so destroyed, classified in accordance with the provision of such Schedule, and describing the circumstances of destruction.

(d) This regulation shall not be construed as excusing compliance with any other lawful requirements for the preservation of accounts, records, or memoranda for longer periods than those herein prescribed.

(e) This regulation shall become effective March 1, 1942.

Economic Regulations

January 26, 1942

The existing regulations of the Civil Aeronautics Board which are of an economic nature and have general applicability and legal effect are as follows:

	Date adopted	Serial number
Part 228—Free and Reduced-Rate Transportation—Con.		
Sec. 228.4—Issuance and interchange of Tickets and Passes for Free or Reduced-Rate Transportation.....	5/24/40	81
Sec. 228.5—Free or Reduced-Rate Overseas or Foreign Air Transportation.....	10/4/40	118
Part 238—Certificates of Public Convenience and Necessity		
Sec. 238.1—Application for Certificates of Convenience and Necessity (formerly Reg. 401-B-1).....	8/20/38	None
Amendment No. 1 to Reg. 401-B-1.....	9/16/38	None
Amendment No. 2 to Reg. 401-B-1.....	10/10/38	None
Amendment No. 1 to sec. 238.1.....	11/8/40	124
Sec. 238.2—Exemption of Alaskan Mail Carriers from Certain Requirements of Regulation 401-B-1 (formerly Reg. 401-B-2).....	10/21/38	None
Sec. 238.3—Terms, Conditions, and Limitations of Certificates of public Convenience and Necessity Issued under sec. 401 of the act (formerly Reg. 401-F-1) as amended.....	4/28/39	11
Sec. 238.4—Terms, Conditions, and Limitations of Certificates of Public Convenience and Necessity Issued under sec. 401 of the Act Authorizing Foreign Air Transportation (formerly Reg. 401-F-2).....	5/17/39	14
Sec. 238.5—Service of "Notice of Non-Stop Service" or "Airport Notice" (formerly Reg. 401-F-3).....	5/19/39	15
Sec. 238.6—Temporary Suspension of Service under Certificates of Public Convenience and Necessity Authorizing Interstate Air Transportation (formerly Reg. 401-K-1).....	7/21/39	29
Part 241—Permits for Foreign Air Carriers		
Sec. 241.1—Application for Foreign Air Carrier Permits (Grandfather Clause)—(formerly Reg. 402-D-1).....	9/16/38	None
Part 248—Interlocking Directors and Officers		
Sec. 248.1—Approvals of Interlocking Relationships (formerly Reg. 409-A-1).....	12/30/38	None
Amendment No. 1.....	1/20/39	"
Part 251—Operating Agreements		
Sec. 251.1—Filing of Pooling and Other Agreements (formerly Reg. 412-A-1). Amendment No. 1—Revision.....	9/26/39	43
Part 280—Forms and Applications		
Sec. 280.1—Reports of Ownership of Stock and Other Interests by Officers and Directors of Air Carriers.....	10/3/39	47
Part 285—Rules of Practice		
Sec. 285.1—Rules of Practice under title IV and sec. 1002 (d) to (l) of the Civil Aeronautics Act of 1938 Revision.....	5/9/39	2
Amendment No. 1.....	5/24/40	3
Amendment No. 2.....	11/22/40	4
Amendment No. 3.....	12/7/40	5
Amendment No. 4.....	1/8/42	6
¹ Rules of Practice have a set of serial numbers apart from the serially numbered regulations.		
Part 202—Accounts, Records and Reports		
Sec. 202.1—Forms of Monthly Reports of Financial and Operating Statistics (formerly Reg. 407-A-1 and sec. 202.1—Forms of Financial and Statistical Reports of Air Carriers)—Revision.....	1/21/42	201
Sec. 202.2—Forms of Accounts of Air Carriers (formerly Reg. 407-D-1)—Revision.....	1/21/42	202
Part 208—Mail Transportation and Service		
Sec. 208.1—Review of Orders of Postmaster General under sec. 405 (e) of the act (formerly Reg. 405-E-1).....	8/25/39	37
Sec. 208.2—Filing of Schedules and Changes therein by Air Carriers under sec. 405 (e) of the act (formerly Reg. 405-E-2).....	8/25/39	38
Part 216—Rates for Transportation of Mail		
Sec. 216.1—Petitions for Determination of Rates of Compensation for Transportation of Mail by Aircraft (formerly Reg. 406-A-1).....	10/4/38	None
Part 224—Tariffs		
Sec. 224.1—Filing, Posting, and Publishing of Tariffs by Air Carriers and Foreign Air Carriers (formerly Reg. 403-A-1)—First revision.....	7/10/40	94
Sec. 224.2—Transportation Furnished under Trade Agreements (formerly Reg. 403-B-3).....	6/16/39	21
Part 228—Free and Reduced-Rate Transportation		
Sec. 228.1—Free Travel for Postal Employees (formerly Reg. 405-M-1).....	9/2/38	None
Amendment No. 1.....	8/12/40	104
Amendment No. 2.....	9/20/40	112
Sec. 228.2—(Formerly temporary Reg. 403-B-1—Repealed by sec. 228.5).....		
Sec. 228.3—Access to Aircraft by Duly Qualified Inspectors of the Civil Aeronautics Authority (formerly Reg. 605-B-1)—Amendment No. 1 to Reg. 605-B-1.....	12/16/38	None
Amendment No. 2 to Reg. 605-B-1.....	2/17/39	2
Amendment No. 1 to sec. 228.3 superseded by Amendment No. 2.....	5/9/39	12
	5/10/40	68

¹ The serial number system was inaugurated on February 10, 1939.

	Date adopted	Serial number
Part 287—Procedure, Evidence and Definitions		
Sec. 287.1—Definitions of Terms Used in Rules, Regulations and Orders of the Authority (formerly Reg. 205-A-1). Amendment No. 1—Revision.....	9/26/39	45
Sec. 287.2—Nondisclosure of Information Obtained by Representatives of the Authority in the Course of Examinations, Studies, and Investigations (formerly Reg. 205-A-2).....	11/16/38	None
Sec. 287.3—Representation of Private Parties by Persons Formerly Associated with the Board Amendment No. 1—Revision.....	2/4/41	142
Part 292—Classifications and Exemptions		
Sec. 292.1—Temporarily Exempting Nonscheduled Operators From Certain Provisions of Title IV of the Civil Aeronautics Act of 1938 (formerly Reg. 400-1)—as amended.....	12/7/38	None
Sec. 292.2—Classification and Exemption of Alaskan Air Carriers.....	7/21/41	173
Blanket Amendment of the Economic Regulations A blanket amendment of the Economic Regulations, codifying all regulations to date.....	9/26/39	44

	Date adopted	Serial number
Part 251—Operating Agreements		
Sec. 251.1—Filing of Pooling and Other Agreements (formerly Reg. 412-A-1).....	7/14/39	27
Part 285—Rules of Practice		
Sec. 285.1—Rules of Practice under title IV and sec. 1002 (d) to (f) of the Civil Aeronautics Act of 1938.....	11/14/38	None
Amendment No. 1 to Rules of Practice.....	4/14/39	1
Part 287—Procedure, Evidence and Definitions		
Sec. 287.1—Definitions of Terms Used in Rules, Regulations and Orders of the Authority (formerly Reg. 205-A-1).....	11/16/38	None
Sec. 287.3—Representation of Private Parties by Persons Formerly Associated with the Board.....	1/27/41	140
Part 292—Classifications and Exemptions		
Sec. 292.1—Temporarily Exempting Nonscheduled Operators from Certain Provisions of Title IV of the Civil Aeronautics Act of 1938 (formerly Reg. 400-1).....	10/18/38	None

Obsolete Economic Regulations

January 26, 1942

Following is a list of obsolete economic regulations and amendments thereto which have been repealed by the Board or superseded by regulations subsequently adopted:

	Date adopted	Serial number
Part 202—Accounts, Records and Reports		
Sec. 202.1—Forms of Financial and Statistical Reports of Air Carriers (formerly Reg. 407-A-1)—Superseded by sec. 202.1, "Forms of Monthly Reports of Financial and Operating Statistics," adopted 1/21/42.....	10/10/38	None
Sec. 202.2—Forms of Accounts of Air Carriers (formerly Reg. 407-D-1)—Superseded by sec. 202.2, "Form of Accounts of Air Carriers," adopted 1/21/42.....	10/10/38	None
Part 224—Tariffs		
Sec. 224.1—Filing, Posting and Publishing of Tariffs by Air Carriers and Foreign Air Carriers (formerly Reg. 403-A-1).....	9/10/38	None
Part 228—Free and Reduced-Rate Transportation		
Sec. 228.2—Free or Reduced-Rate Transportation (formerly Temporary Reg. 403-B-1).....	10/31/38	None
Sec. 228.3—Access to Aircraft by Duty Qualified Inspectors of the Civil Aeronautics Authority (formerly Reg. 605-B-1). Amendment No. 1 to sec. 228.3.....	1/19/40	55
Part 238—Certificates of Public Convenience and Necessity		
Sec. 238.3—Terms, Conditions, and Limitations of Certificates of Public Convenience and Necessity Issued under sec. 401 of the act (formerly Reg. 401-F-1).....	2/24/39	3

Accident Reports

(Continued from page 63)

Model 8B Luscombe, received major damage.

The pilot was enroute from Ponca City, Okla. to Amarillo Tex. Late in the afternoon he landed in Shamrock, Tex., and elected to go no further on his trip that day. He then obtained a parachute and took off to practice maneuvers locally. At a point about ten miles north of the airport, while at an altitude of 2,800 feet, he started a wing-over. During this maneuver the engine failed. The pilot tried to start it again but without success. He chose a field and made a seemingly good landing but when near the end of the landing roll the aircraft was nosed over on its back to the long grass in the field.

The evidence does not indicate why the engine stopped.

Probable Cause.—Powerplant failure resulting in a forced landing on unsuitable terrain.

Fails to Maintain Flying Speed During Low Turn

An accident at Rudy, Ark., on May 8, 1941, resulted in fatal injury to William M. Kessler and to Lloyd Davenport. Kessler held a private pilot certificate and had accumulated about 70 hours flying time. The aircraft, a Piper, Model J-2 was demolished.

The pilot, accompanied by his passenger, took off from Fort Smith, Ark. Airport on a local pleasure flight. He proceeded directly to the vicinity of Davenport's home, which is approximately 10 miles north of the airport. The passenger's brother, who was stand-

ing in the yard of the home, first saw the airplane approaching from the south at an altitude of about 1,000 feet. The pilot circled the house twice, losing altitude, with the engine partly throttled. Kessler then headed north for about one-half mile, and flew at a very low altitude over a strawberry patch in which the passenger's mother and some friends were picking strawberries. He returned to the vicinity of the house, and, at an altitude estimated as 150 feet, apparently started to circle the house again. As the plane was banked sharply to the right, it was stalled and fell into a right spin. Recovery was not effected and after about one complete turn the plane struck the ground on its nose approximately 50 yards in front of the house.

Investigation disclosed that the aircraft was airworthy until impact occurred.

Probable Cause.—Failure of pilot to maintain flying speed during a turn at low altitude.

Contributing Factor.—Action of inexperienced pilot in attempting maneuvers at low altitude.

Legislation

(Continued from p. 66)

for other purposes; referred to the Committee on Military Affairs.

H. R. 6384—COMPENSATION FOR AIR TRAVEL (O'Leary); a bill to amend the Act of February 14, 1931, as amended, so as to permit the compensation on a mileage basis of civilian officers or employees for the use of privately owned airplanes while traveling on official business; referred to the Committee on Expenditures in the Executive Departments.

Legislative Action

H. Res. 442—AIR ACCIDENTS; a resolution authorizing an additional \$10,000 for expenses for the Select Committee to Investigate Air Accidents was agreed to by the House.

S. 2112—NACA PAY; bill as amended, authorizing overtime pay for certain employees of the National Advisory Committee for Aeronautics, was passed by the House.

H. R. 6460—NAVY DEPARTMENT APPROPRIATIONS BILL FOR FISCAL YEAR 1943; provides for additional aircraft, equipment, and training of pilots; passed by Senate as amended.

De-Icing

(Continued from page 63)

to maintain metal temperatures above freezing under the insulating effect of ice formations. In such cases, supplementary heating may be required.)

2. Since small ice formations tend to continually slough off the passage walls, the passages should be designed and fabricated with aerodynamic cleanliness to facilitate the passage of the small pieces of ice as they are freed.

The importance of minimizing the infection rate of free moisture and possible means of controlling this rate will be discussed in a subsequent bulletin to be issued soon.

Status of Parts of the Civil Air Regulations and Regulations of the Administrator of Civil Aeronautics

As of February 15, 1942

All persons affected by these Regulations, including those preparing for examinations for certificates may obtain required Parts of the Regulations from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C., without charge.

ONLY PARTS NEEDED SUPPLIED FREE

For example, pilots are governed in general by Parts 01., 20., 60., and 98.; aircraft mechanics by Parts 01., 04., 15., 18., 24., 95., and Section 60.32; and aircraft engine mechanics by Parts 01., 04., 13., 14., 18., 24., and 98. It should be remembered that individuals are entitled to receive free of charge only those portions of the Regulations which directly govern the activity in which they are engaged and this activity must be definitely stated when request is made.

HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

Those persons not affected by the Regulations, but desiring all or any part of the

Regulations for other purposes, may obtain them as follows: Those Parts on which a price is listed in the tabulation below are on sale by the Superintendent of Documents, U. S. Government Printing Office (shown as G. P. O. in table), Washington, D. C., and are not available for free distribution except as stated in the first paragraph.

Eventually, all Parts will be placed on sale; meanwhile, Parts not yet on sale (carrying remark in tabulation below "order from C. A. A. only") may be obtained without charge from the C. A. A. upon demonstration of valid interest on the applicant's part.

ALL AMENDMENTS TO THE REGULATIONS, AND NOTICE OF NEW PARTS, ARE PRINTED IN THE CIVIL AERONAUTICS JOURNAL, AS RELEASED.

The tabulation below carries in the right-hand column the numbers of all effective amendments to each Part issued subsequent to its publication. Parts ordered from C. A. A. include all effective amendments,

but when Parts are purchased from G. P. O. amendments must be requested separately from C. A. A.

Civil Aeronautics Manuals supplementing certain Parts with detailed interpretations of their respective provisions are issued. They are numbered the same as the Parts they supplement, and those Parts accompanied by Manuals carry appropriate notations. All Manuals are obtained from C. A. A. only, without charge.

PARTS CANCELLED AND UNASSIGNED

Cancelled Parts 00. and 03. now incorporated in Part 01.; cancelled Part 23. now incorporated in Part 51.; and cancelled Part 25. now incorporated in Part 24. Parts 90.-96., inclusive, cancelled. All other Part numbers not shown are unassigned.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in loose-leaf binders.

Civil Air Regulations

PART No.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
AIRCRAFT					
01	AIRWORTHINESS CERTIFICATES.....	11-1-41	In stock at C. A. A. and on sale at G. P. O.....	\$0.05	Spec. Reg. Ser. 200.
02	TYPE AND PRODUCTION CERTIFICATES.....	3-1-41	In stock at C. A. A. and on sale at G. P. O.....	.05	
04	AIRPLANE AIRWORTHINESS (MANUAL 04, 2-1-41) ¹	4-1-41	In stock at C. A. A. and on sale at G. P. O.....	.15	116 129.
13	AIRCRAFT ENGINE AIRWORTHINESS (MANUAL NOT ISSUED).....	8-1-41	In stock at C. A. A. and on sale at G. P. O.....	.05	
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18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS. (MANUAL 18, 6-1-41).....	6-1-41	In stock; order from C. A. A. only.....		
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20	PILOT CERTIFICATES.....	5-1-40	In stock at C. A. A. and on sale at G. P. O.....	.05	63, 65, 67, 75, 82, 83, 87, 88, 99, 101, 107, 110, 111, 112, 115, 117, 118, 125, 126, 127, 20-22 thru 20-36. Spec. Reg. Ser. 203.
21	AIRLINE TRANSPORT PILOT RATING.....	11-15-40	In stock; order from C. A. A. only.....		87, 101, 115, 21-5.
22	LIGHTER-THAN-AIR PILOT CERTIFICATES.....	9-15-41	In stock at C. A. A. and on sale at G. P. O.....	.10	22-1 thru 22-3.
24	MECHANIC CERTIFICATES.....	5-1-40	In stock at C. A. A. and on sale at G. P. O.....	.05	44, 61, 73, 75, 87, 109, 24-7.
26	AIR-TRAFFIC CONTROL TOWER OPERATOR CERTIFICATES.....	2-3-42	To be available soon at C. A. A. and on sale at G. P. O.....		
27	AIRCRAFT DISPATCHER CERTIFICATES.....	7-15-40	In stock at C. A. A. and on sale at G. P. O.....	.05	74, 75, 87, 27-4, 27-5.
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51	GROUND INSTRUCTOR RATING.....	5-1-40	In stock at C. A. A. and on sale at G. P. O.....	.05	75, 87, 128, 51-4.
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53	MECHANIC SCHOOL RATING (MANUAL 53, 5-40).....	9-15-40	In stock at C. A. A. and on sale at G. P. O.....	.05	75, 87.
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¹ Amendment as issued by C. & I. Div. Release 50, 6-3-41.
² Amendment No. 1 issued as S. R. Release No. 62, 8-12-41.

* Amendment 4-14-41 issued as S. R. Release No 77, 11-13-41.
⁴ Effective date suspended until 3-1-42 by Order No. 1490.

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